

19980817.ba v02_n173.bam.980817 v02_n174.bam.980817

>From ???@??? Mon Aug 17 17:18:36 1998
Message-Id: <199808171438.JAA05791@sco.theporch.com>
Date: Mon, 17 Aug 1998 09:36:24 CDT
Subject: BOATANCHORS digest 2173

BOATANCHORS Digest 2173

Topics covered in this issue include:

- 1) Home of the Viking
by Bill Hawkins <bill@iaxs.net>
- 2) Basket Case Wanted
by PLT1032@aol.com
- 3) BA places in South Calif?
by "Lawrence R. Ware" <lrware@pipeline.com>
- 4) Re: Eveready 771 Battery
by Ken Corwin <kenc2@pacbell.net>
- 5) RA-17L Rides Again
by Dick Dillman <ddillman@igc.apc.org>
- 6) HRO
by w5sum@ms1.nwla.com
- 7) FS Original Johnson manuals
by JONWEINER@aol.com
- 8) For sale pick up only
by "Edward J. White" <wa3bzt@dpnet.net>
- 9) ADMINISTRIVIA: Changing Email Addresses
by listown@jackatak.theporch.com (Mail List Owner)
- 10) High Z 'phone call
by MNHopkins@aol.com
- 11) Unknown receiver
by JONWEINER@aol.com
- 12) Collins Model 1 AM transmitter
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- 13) FS: Hallicrafters meters
by JONWEINER@aol.com
- 14) Italian amplifier
by BEN NOCK <G4BXD@compuserve.com>
- 15) ULTRA MODULATION A.M.
by JOHN_SEHRING.parti@ecunet.org (JOHN SEHRING)
- 16) Re: BA places in South Calif?
by Dick Dillman <ddillman@igc.apc.org>
- 17) RACAL Service?
by Dick Dillman <ddillman@igc.apc.org>
- 18) CV Equivalents/TV-10 Settings?
by Dick Dillman <ddillman@igc.apc.org>
- 19) 32V RF deck removal

by "Bill Coleman N2BC" <n2bc@ibm.net>
20) Re: Unknown receiver
by "Arden Allen" <gumbear@pacbell.net>
21) Re: ULTRA MODULATION A.M.
by "Arden Allen" <gumbear@pacbell.net>
22) SP-600 JX needs Home
by NBroline@aol.com
23) Re: Filter Identification F500 F 94
by k5jv@vonl.com (Lon W. Cottingham)
24) Mil.Aircraft Rcvr.Info Wanted
by Chip Owens <owens@atd.ucar.edu>

Date: Sat, 15 Aug 1998 18:26:08 -0500 (CDT)
From: Bill Hawkins <bill@iaxs.net>
Message-Id: <199808152326.SAA20663@citrus.iaxs.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Home of the Viking

Anyone else go to Waseca, MN this morning looking for the rows of open
trunks full of fine Johnson equipment?

Saw an SX-88, \$NFS

Regards,
Bill Hawkins

From: PLT1032@aol.com
Message-ID: <30246a2d.35d631d8@aol.com>
Date: Sat, 15 Aug 1998 21:11:51 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: Basket Case Wanted
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

Wanted....
BC-348 basket case in any condition.

Bob Lindgren

Message-Id: <3.0.5.32.19980815210651.008818e0@pop.pipeline.com>
Date: Sat, 15 Aug 1998 21:06:51 +0000
To: Old Tube Radios <boatanchors@theporch.com>
From: "Lawrence R. Ware" <lrware@pipeline.com>
Subject: BA places in South Calf?

Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Next month business will take me all the way from sunny & *hot* Florida to the Santa Barbara, CA area.

Rumor has it that a man with a spare day and a car could find quite a few electronic surplus and BA friendly places to visit. I expect to have both, and thus could use both a plan (of attack) and even a guide... :-)

Suggestions?

-Larry

OK, who stopped payment on my reality check?

lrware@pipeline.com

Message-ID: <35D67D60.1219@pacbell.net>
Date: Sat, 15 Aug 1998 23:34:08 -0700
From: Ken Corwin <kenc2@pacbell.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
CC: Boatanchors at the Porch <boatanchors@theporch.com>
Subject: Re: Eveready 771 Battery
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Hello, Andre-

According to my battery book, that Eveready 771 "C" battery provides -3 and -4.5 volts as indicated by Al Klase. It was made up of three "D" cells. You should be able to rig a substitute.

Regards, Ken KF6NUR

Date: Sat, 15 Aug 1998 15:41:26 -0700 (PDT)
Message-Id: <2.2.16.19980815153525.0dc788ca@pop.igc.org>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
To: Old Tube Radios <boatanchors@theporch.com>

From: Dick Dillman <ddillman@igc.apc.org>
Subject: RA-17L Rides Again

I know I can trust you to not mention this to the other receivers around here but I must admit the RACAL RA-17L has always been my favorite. There's just something about that radio in the way it looks, feels and performs that makes it stand just a bit above the other classics. It's hard to say exactly what but I've heard other RA-17 users say the same.

It must have been a year ago that the RA-17L stopped working. Today I wrestled the monster out of the rack to see if I could possibly find out why. I've always found the radio a bit intimidating with its Wadley loop circuitry and CV type valves (it's a L model, mind). But the radio gods were smiling on me today. The very first valve I popped into the TV-10/U was quite dead. And it was a 6BA6 rather than one of the CV types I don't have replacements for. I pulled out one of my many boxes o' tubes and there, sitting above the rest, was a new 6BA6.

Well, I imagine you can guess the rest. The RA-17L is once again perking along, much to my delight.

Regards,

Dick

Dick Dillman
<ddillman@igc.apc.org>
WPE2VT W6AWO
Collector Of Heavy Metal:
Harleys, Willys and Radios Over 100lbs.

From: w5sum@ms1.nwla.com
Message-Id: <199808161213.HAA07431@ms1.nwla.com>
To: Old Tube Radios <boatanchors@theporch.com>
Date: Sun, 16 Aug 1998 07:02:13 +0000
MIME-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT
Subject: HRO

well I spent the evening playing with my newly acquired HRO.
Nice radio, I've seen them before but had never used on..

fairly good audio.. but my cw oscillator doesn't work.. that should be simple to repair...

this is also a fairly sensitive radio. This one is dated 1946 and is the version with the 6K7's and 6J7's...

now.. lets see what it does on 10m today LOL

Ronnie
W5SUM - Ronnie Hull
PO Box 8941
Shreveport, La 71148

From: JONWEINER@aol.com
Message-ID: <1b991fc7.35d6ec86@aol.com>
Date: Sun, 16 Aug 1998 10:28:21 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: FS Original Johnson manuals
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

I am selling the following Johnson manuals. All are in excellent condition.

Viking Invader 2000 Transmitter: \$40. (new, unused)

Viking Valiant II Transmitter: \$35. (new, unused)

Viking Ranger II Transmitter: \$30. (new, unused, but slight staining on page 1)

Viking Invader Transmitter: \$30. (new, unused)

Add \$2. to each for postage.

Jon, K1VVC

Message-ID: <006701bdc930\$f430e460\$5295a4d1@default>
From: "Edward J. White" <wa3bzt@dpnet.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: For sale pick up only
Date: Sun, 16 Aug 1998 12:14:31 -0400
MIME-Version: 1.0
Content-Type: multipart/alternative;
boundary="-----_NextPart_000_0064_01BDC90F.6C55D9E0"

This is a multi-part message in MIME format.

-----=_NextPart_000_0064_01BDC90F.6C55D9E0

Content-Type: text/plain;
charset="iso-8859-1"

Content-Transfer-Encoding: quoted-printable

Hi Gang:

Make a offer for this reperforator,transmitter tytelypewriter =
TT-76C/GGC. I would like it to be picked up here in Delaware. I will be =
going to Rochester for the AWA and could take it with me
any takers
Ed White
WA3BZT Delaware
wa3bzt@dpnet.net
=20

-----=_NextPart_000_0064_01BDC90F.6C55D9E0

Content-Type: text/html;
charset="iso-8859-1"

Content-Transfer-Encoding: quoted-printable

<!DOCTYPE HTML PUBLIC "-//W3C//DTD W3 HTML//EN">
<HTML>
<HEAD>

<META content=3Dtext/html; charset=3Diso-8859-1 =
http-equiv=3DContent-Type>
<META content=3D'"MSHTML 4.72.3110.7"' name=3DGENERATOR>
</HEAD>
<BODY bgColor=3D#ffffff>
<DIV>Hi Gang:</DIV>
<DIV>Make a offer for this =
reperforator,transmitter=20
tytelypewriter TT-76C/GGC. I would like it to be picked up here in =
Delaware. I=20
will be going to Rochester for the AWA and could take it with =
me</DIV>
<DIV>any takers</DIV>
<DIV>Ed White</DIV>
<DIV>WA3BZT Delaware</DIV>
<DIV><A=20
href=3D"mailto:wa3bzt@dpnet.net">wa3bzt@dpnet.net</DIV>
<DIV> </DIV></BODY></HTML>

-----=_NextPart_000_0064_01BDC90F.6C55D9E0--

Message-Id: <199808161615.LAA13529@jackatak.theporch.com>
From: listown@jackatak.theporch.com (Mail List Owner)
To: Old Tube Radios <boatanchors@theporch.com>
Subject: ADMINISTRIVIA: Changing Email Addresses
Date: Sun, 16 Aug 98 11:15:01 CDT

Gang-

This periodic post is intended to help subscribers whose email address has changed, preventing posting or receipt of the list.

If you change ISP (InterNet Service Provider), simply send me an email advising the change, and I will do my best to implement the change quickly.

For those unfortunates, whose ISP has made a change without advising their customers of the potential impact of that change on subscribers to email lists like the boatanchors, where one must be a subscriber to post to the list, try to follow along...

Under some circumstances, the changes to your email address are "transparent" to you, but prevent posting. I get error notification for these kinds of problems, and I try to work them out. However, I may miss one, and on this end, the process is anything BUT automatic.

You have a bigger stick than I do. You and your ISP have the primary responsibility to repair the problems caused by the change at the ISP. I have zero leverage with your ISP, and you have great leverage.

Most ISP maintain a customer service department to help with problems like these. This should be your first line of support for email problems. I am happy to assist and consult, but try to understand that when your ISP makes a change to their email handler, and that change prevents you from posting to the boatanchors list, I can help, but resolving this problem is your responsibility, working with your ISP. I am but a volunteer, contributing my time to administer the list.

Thank you for your attention.

--

73

Jack, W4KH/Mobile - - - BoatAnchor Mailing List Archiver/Owner - - -
listown@jackatak.theporch.com - "Plus ca change, plus c'est la meme chose"
"Il n'y a que les idiots qui ne changent jamais d'idee"
Sun Aug 16 11:15:01 CDT 1998

From: MNHopkins@aol.com

Message-ID: <76465d1f.35d708a8@aol.com>
Date: Sun, 16 Aug 1998 12:28:23 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Cc: Glowbugs@piobaire.mines.uidaho.edu
Mime-Version: 1.0
Subject: High Z 'phone call
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

I purchased from the broadcast radio collectors a tangled mass of old style high impedance earphones as listed below for some Newkirk style listening.

I know nothing of such, having been licensed in 1977

How do I test them? Do they repair?

they say:

Alinco Magnetic N0. 15,

Brandes Superior,

Dymac Type E,

NRI,

Trimm,

military set marked ANB H1 from Pax electronics

73 de ab5L, michael in dallas, student of Tecraft and International Crystal (ICM) ham products and mementoes of Six Meters' Golden Age: 1957-58

Michael Hopkins

Box 226841

Dallas, TX 75222 MNHopkins@AOL.com

From: JONWEINER@aol.com
Message-ID: <7db6005e.35d70e56@aol.com>
Date: Sun, 16 Aug 1998 12:52:37 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: Unknown receiver
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

As a collector of unusual early communications receivers (and transmitters), I am always looking to add to my collection. Yesterday at the Huntsville hamfest I found a receiver that isn't in either Moore's or Osterman's book. It's a Technical Radio Company model LRR-6, made in San Francisco in 1945. The receiver is a 15 tube single conversion superhet with a magic eye, three levels of IF selectivity, and all the usual features (AVC, NL, S/R switch). What is unusual is the frequency coverage- three bands: .53Mhz to 1.6Mhz, 5.4Mhz to 9.6Mhz, and 9.4Mhz to 16Mhz. I do have a copy of the manual, and since this is serial number 304, I wonder if anyone has any further info about it or the company?

Jon, K1VVC

Message-Id: <199808161731.NAA00497@camel7.mindspring.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Date: Sun, 16 Aug 1998 13:29:44 -0400
To: Old Tube Radios <boatanchors@theporch.com>
From: john <johnmb@mindspring.com>
Subject: Collins Model 1 AM transmitter

Anyone familiar with this rig, to give me a description?

Thanks!
/John

From: JONWEINER@aol.com
Message-ID: <85042ae.35d72e60@aol.com>
Date: Sun, 16 Aug 1998 15:09:19 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: FS: Hallicrafters meters
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

I have for sale the following two Hallicrafters meters in excellent condition:

HT-32 meter \$35.

FPM-300 meter \$20.

Prices include postage.

Jon, K1VVC

Date: Sun, 16 Aug 1998 15:11:49 -0400
From: BEN NOCK <G4BXD@compuserve.com>
Subject: Italian amplifier
To: Old Tube Radios <boatanchors@theporch.com>
Message-ID: <199808161512_MC2-5642-12F4@compuserve.com>
MIME-Version: 1.0
Content-Transfer-Encoding: quoted-printable
Content-Type: text/plain; charset=ISO-8859-1
Content-Disposition: inline

Does anyone have a circuit for the BREMI BRL200 amplifier ?

cheers, Ben G4BXD.

MIME-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"
Content-Transfer-Encoding: 7bit
Date: Sun, 16 Aug 1998 15:21:20 -0400 (EDT)
Subject: ULTRA MODULATION A.M.
To: Old Tube Radios <boatanchors@theporch.com>
From: JOHN_SEHRING.parti@ecunet.org (JOHN SEHRING)
Message-ID: <9808161521.aa04737@pcusa01.ecunet.org>

> I saw in the past day a description that this was essentially moving
> the signal to look like DSB partial carrier and that excessive
> negative would cause a 180 degree phase shift.
>
> The first part is very close to real but not quite. What really
> happens is that with ultramodulation you change the average value of
> the carrier at the rate of the peaks of the syllables.

The latter sounds correct as this is what we see with SSB too.

> This translates in the frequency domain to sidebands at the syllable
> rate which can be less than 1 Hz.

> On a spectrum analyser this would look like the carrier is changing
> value, but in fact you still have a constant carrier with some sidebands
> *really* close to the carrier. If you consider the carrier power to be
> all the energy within about +/- 20 Hz of the carrier to actually *be*
> the carrier, then this assumption is correct.

Sounds ok. Anyone else?

Also consider that as SSB signal's envelope represents the Hilbert transform of the original modulating signal. That's why it sounds goofy on

an AM detector!

- > At the receiver, you mess up the AGC in most old radios because the
- > design assumption is that any energy below about 50 Hz is minimal and
- > of relatively constant amplitude. Any changes in this value are due
- > to the fading that the AGC is trying to track. When you add
- > ultramodulation the AGC does exactly what it is supposed to do: it
- > raises and lowers the gain following the syllabic changes. The way to
- > solve the problem at the receiver is to lengthen the time constant to
- > many seconds. Of course, then rapid fades blow away the signal.

Yes.

- > The assertion that greater than 100% negative modulation would cause a
- > phase reversal seems unlikely. Such a reversal would cause some
- > distortion, but not much because it is phase distortion. This phase
- > reversal would require that you use a 4 quadrant multiplier (like the
- > diode DBM's) to generate the phase reversal. I would guess that all
- > rigs that do ultramodulation on the output amplifiers are 2 quadrant
- > multipliers. That means that when the modulation tries to go negative
- > you get clipping. That causes square wave type generation and *THAT*
- > causes excessive modulation harmonics and splatter (amplitude rather
- > than phase distortion).

In the case of more than 100% *negative* modulation, it's a different story. The carrier does indeed reverse its polarity (180 degree phase shift). Such a reversal is a form of phase modulation which requires many extra (for phase modulation, 90 degree-shifted) sidebands, hence splatter. And since the phase change is so abrupt, the bandwidth needed is even greater.

Do a phasor (a kind of a frequency-sensitive vector) analysis (by hand is fine) to prove this. The carrier phasor would need a huge chunk of 90 degree shifted sidebands to jump polarity like this. Look at Terman's, or W6QYT's (Oswald Villard) analysis of this in 6/47 QST for a different way of seeing this.

- > Given the likelihood that the receiver's AGC will pump on the syllabic
- > rate of the sidebands, I doubt that the system as actually implemented
- > would really give much increase in talk power.

If slow (SSB-type release times) AGC is used, then ok. Actually, slow release AGC gives more comfortable listening as you don't get blasted by excessive rx gain during deep selective fading fades when there isn't enuf carrier energy relative to sideband energy.

Yet I see it (apparently >100% positive modulation) on most SW bdcst stations. I need to get my MM-2 going to take a look at this.

-John Sehring (4:18 pm Thu, Aug 13, 1998 at Custer, SD USA) ucc wb2eqg

Date: Sun, 16 Aug 1998 12:39:13 -0700 (PDT)
Message-Id: <2.2.16.19980816123310.4297304c@pop.igc.org>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
To: Old Tube Radios <boatanchors@theporch.com>
From: Dick Dillman <ddillman@igc.apc.org>
Subject: Re: BA places in South Calif?

At 09:06 PM 8/15/98 +0000, Lawrence R. Ware wrote:

>Next month business will take me all the way from sunny & *hot*
>Florida to the Santa Barbara, CA area.
>
>Rumor has it that a man with a spare day and a car could find
>quite a few electronic surplus and BA friendly places to visit.
>I expect to have both, and thus could use both a plan (of attack)
>and even a guide... :-)
>
>Suggestions?

First, make sure you get a car with good air conditioning. But you probably already know that.

As to BA places, I suggest you consider a visit to Michael P. Murphy's Surplus Warehouse in El Cajon. Mike has been in the business a long time and, as he says, "I lost my mind long ago". The front part of the store is interesting but ask to see "the back" and to meet Mike. His prices are not cheap but you never know what exotica might be lurking in the rear area of the store.

Murphy's Surplus Warehouse
401 North Johnson Ave
El Cajon, CA 92020
Phone: 619-444-7717
Fax: 619-444-6750

If you pay a visit please post a report on what you find.

Regards,

Dick

Dick Dillman

<ddillman@igc.apc.org>
WPE2VT W6AWO
Collector Of Heavy Metal:
Harleys, Willys and Radios Over 100lbs.

Date: Sun, 16 Aug 1998 13:32:17 -0700 (PDT)
Message-Id: <2.2.16.19980816132614.3cef6b76@pop.igc.org>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
To: Old Tube Radios <boatanchors@theporch.com>
From: Dick Dillman <ddillman@igc.apc.org>
Subject: RACAL Service?

Can anyone recommend a person in the States competent to do an alignment on my working RACAL RA-17L receiver? All leads appreciated.

Regards,

Dick

Dick Dillman
<ddillman@igc.apc.org>
WPE2VT W6AWO
Collector Of Heavy Metal:
Harleys, Willys and Radios Over 100lbs.

Date: Sun, 16 Aug 1998 13:32:15 -0700 (PDT)
Message-Id: <2.2.16.19980816132612.12771366@pop.igc.org>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
To: Old Tube Radios <boatanchors@theporch.com>
From: Dick Dillman <ddillman@igc.apc.org>
Subject: CV Equivalent/TV-10 Settings?

Greetings, folks. Now that my RACAL RA-17L is more or less back in service I'd like to check the remaining tubes... er, I mean valves to see if there are any others requiring replacement. The trouble is that the L model is the British version and almost all the valves carry the CV ("common valve")

designation.

I have a copy of "Handbook of Radio, TV, Industrial & Transmitting Tube & Valve Equivalents" to hand, which must hold the record for the longest title for the smallest book. It provides some useful equivalents for the valves in the RA-17L but not all. And the equivalents it does provide are not listed in the tube chart for my TV-10/U tube tester.

Can anyone provide US equivalents and/or TV-10/U test settings for any of the valves below?

CV-4014 = 6040 or 6AM6

CV-5331 =

CV-4046 =

CV-3998 =

CV-4012 = 5750 or 6BY6

CV-4007 = 5726 or 6AL5

Thanks,

Dick

Dick Dillman
<ddillman@igc.apc.org>
WPE2VT W6AWO
Collector Of Heavy Metal:
Harleys, Willys and Radios Over 100lbs.

Message-ID: <000001bdc962\$525c4a80\$9a486420@m118046h.stny.lrun.com>
From: "Bill Coleman N2BC" <n2bc@ibm.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: 32V RF deck removal
Date: Sun, 16 Aug 1998 18:06:56 -0400
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Need the high-level steps for gaining access to the backside of the 32V RF

deck (S402 & L404 area). I initially thought all the power supply connections were socketed until I spotted that bundle of wires headed for the front panel. I have a sinking feeling that the front panel has to go - am I right??

THX & 73, Bill N2BC

Message-Id: <199808162255.PAA19827@mail-gw2.pacbell.net>
From: "Arden Allen" <gumbear@pacbell.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Unknown receiver
Date: Sun, 16 Aug 1998 15:57:19 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

Hello Jon;

>It's a Technical Radio Company model LRR-6, made in San Francisco
in 1945. The
> receiver is a 15 tube single conversion superhet with a magic eye, three
> levels of IF selectivity, and all the usual features (AVC, NL, S/R
switch).
> What is unusual is the frequency coverage- three bands: .53Mhz to 1.6Mhz,
> 5.4Mhz to 9.6Mhz, and 9.4Mhz to 16Mhz.

Sounds suspiciously like a shipboard marine band/entertainment receiver similar to some of the EH Scott types. Does it have a low radiation front end (copious shielding)?

Arden Allen KB6NAX Vallejo, CA gumbear@pacbell.net

Message-Id: <199808162314.QAA23167@mail-gw2.pacbell.net>
From: "Arden Allen" <gumbear@pacbell.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: ULTRA MODULATION A.M.
Date: Sun, 16 Aug 1998 16:16:23 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

Gentlemen;

> > What really happens is that with ultramodulation you change the
average value of

> > the carrier at the rate of the peaks of the syllables.
>
> The latter sounds correct as this is what we see with SSB too.

Beg to differ with these statements: How can you "see" something that isn't there? There is no carrier (darn little) in a SSB (more correctly SSBSC) signal. What you *are* seeing is the algebraic sum of the sidebands. The former statement is a description of modulation distortion, no matter how you cut it. Taken literally, sideband energy would be created throughout and beyond the audio sidebands (in other words *splatter*). The comment on invisible narrow sidebands is wishful thinking. The only way that can happen is with audio agc with an attack/decay bandpass well below audio frequencies. Mr. Fourier can straighten you out on these annoying little details. Hi!

Arden Allen KB6NAX Vallejo, CA gumbear@pacbell.net

From: NBroline@aol.com
Message-ID: <ce63bd94.35d7a20f@aol.com>
Date: Sun, 16 Aug 1998 23:22:54 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Cc: roth@onr.com
Mime-Version: 1.0
Subject: SP-600 JX needs Home
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

A local BA collector has an SP-600JX that needs a new home. It is working and well calibrated w/no previous hacking. Contact Duey, K5KZQ, at roth@onr.com. He is in Austin, Texas.

73

Nick W5FUA

Message-ID: <000e01bdc9d6\$a106be80\$690adfd0@k5jv.kingwoodcable.com>
From: k5jv@von1.com (Lon W. Cottingham)
To: Old Tube Radios <boatanchors@theporch.com>
Cc: "Boat Anchors" <boatanchors@theporch.com>,
"Collins List" <collins@qth.net>
Subject: Re: Filter Identification F500 F 94
Date: Mon, 17 Aug 1998 07:00:25 -0500
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Ian,

The 500 Khz, 9.4 filters were made for the later production runs of the ARR-41, the Collins designed airborne receiver that replaced the BC-348.

Fair radio sold them for \$25.00 each about two years ago. I bought all they had, at that time (they have all gone to other J4 users). To use them in the 51J4, as I do, you must grind (do not use cutters) off the solder lug on the filter pins. Round off the bottom and they will plug directly into the J4 filter socket. The way I look at things, a 51J4 with 3.1 Khz, 6 Khz, and 9.4 Khz filters is just about the ultimate in AM reception. I use this setup regularly with in combination with the KW-1.

73 de Lon Cottingham, K5JV

From: Chip Owens <owens@atd.ucar.edu>
Message-Id: <199808171436.IAA12839@ale.atd.ucar.edu>
Subject: Mil.Aircraft Rcvr.Info Wanted
To: Old Tube Radios <boatanchors@theporch.com>
Date: Mon, 17 Aug 1998 08:36:09 -0600 (MDT)
MIME-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit

Have the following aircraft receiver & accessories:

Receiver: BC-AR-429 sn.4647 mfg. by Western Electric,
bare alum. finish, with all tubes. Cosmetically
9 on a scale of 10. No corrosion or scratches.

Local Tuning Knob: CW 23022

Coil Set: C-379 covers: 201 to 398kc & 2500 to 4700kc.
sn. 11672, alum. finish, excellent condition

Ant. Relay Box: BC-AL-408 sn. 1826, black wrinkle finish
poor condition, mfg. Graybar Electric Co.

Control Box: BC-AE-231, sn.16, black wrinkle finish,
mfg. Aircraft Radio Corp., good condition

Connector: mating connector for receiver and about 12" of
what appears to be an original cable, CD-226

Can anyone suggest when this set was manufactured? It looks like it was a pre WW2, but don't know exactly when. Size is slightly longer and wider than the ARC-5 & SCR-274N series. The coil set plugs into the rcvr. on the right-hand side and

is similar to the HRO style plug-in coil set, except that it protrudes out the side instead of being inserted into the set. Can anyone tell me the pinout of the power connector? Offers? Is this the receiver of what was later designated the GF/RU?

Chip, NW00
Boulder, CO

End of BOATANCHORS Digest 2173

>From ???@??? Mon Aug 17 22:31:17 1998
Message-Id: <199808180108.UAA14041@sco.theporch.com>
Date: Mon, 17 Aug 1998 20:07:50 CDT
Subject: BOATANCHORS digest 2174

BOATANCHORS Digest 2174

Topics covered in this issue include:

- 1) More Ultramodulation
by mack@mails.imed.com (Ray Mack)
- 2) Re: Mil.Aircraft Rcvr.Info Wanted
by David Stinson <arc5@ix.netcom.com>
- 3) Re: Crypto wheels/cogs?
by William Donzelli <william@ans.net>
- 4) Re aviation radio
by philip mccoey <dgnova@erols.com>
- 5) Re: Unknown receiver
by polepeeg@aa4rm.ba-watch.org (BA Marina Electrician)
- 6) Re: Big Tube whazzis...
by William Donzelli <william@ans.net>
- 7) Re: Re aviation radio
by William Donzelli <william@ans.net>
- 8) aircraft radio identified
by Chip Owens <owens@atd.ucar.edu>
- 9) Modulation xfmr. ID needed
by Chip Owens <owens@atd.ucar.edu>
- 10) My gassy tubes...
by sinned@VNET.IBM.COM
- 11) RE: Modulation xfmr. ID needed
by Ed Sieb <esieb@gmsiworld.com>
- 12) New Doerle RX book (review)
by MNHopkins@aol.com
- 13) Re: Modulation xfmr. ID needed

- by Charles Ring <charlesr@infonline.net>
14) FWD: R-100/URR question
by Tom Norris <badger@telalink.net>
15) Re: Modulation xfmr. ID needed
by Tom Smith <tsmith@hal-pc.org>
16) BA Job with the FBI
by provero@connix.com
17) BA Job with the FBI
by provero@connix.com
18) Re: More Ultramodulation
by "Roberta J. Barmore" <rbarmore@indy.net>

Mime-Version: 1.0
Date: Mon, 17 Aug 1998 10:42:45 -0600
Message-Id: <000ED20E.@mails.imed.com>
From: mack@mails.imed.com (Ray Mack)
Subject: More Ultramodulation
To: Old Tube Radios <boatanchors@theporch.com>
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit
Content-Description: cc:Mail note part

I am quite a disadvantage since I have never seen the articles on ultramodulation. I also jumped into this in the middle. Can someone post a brief refresher on the mechanism of doing ultramodulation as in the literature?

I am unaware of any classic modulators for AM that did anything other than plate, control grid or screen grid modulation. These are **all** 2 quadrant multipliers and cannot do the phase reversal as John mentions below. The phase reversal John talks about **requires** a balanced modulator. As I stated earlier, a 2 quadrant multiplier can only react to negative modulation signals by clipping.

Actually, the phase reversal is quite possible with **only** 2 sine wave sidebands generated (it does **not** imply infinite sideband generation like FM). If you produce DSB-SC with infinite carrier suppression and a sine wave modulating signal, you get 2 sine waves in the frequency domain. In the time domain, it looks like the output signal carrier reverses phase every time the modulating sinewave goes from positive to negative and vice versa. This is indeed reproducible using the phasor analysis that John mentioned, but you only get 2 sine waves out!

Arden is correct. Mr. Fourier does indeed give the answer. If you have frequency components between zero Hz and 50 Hz you will see them in the output. The problem with such low frequencies is that we cannot build tools to measure such narrow frequency stuff in real time. (Mr. Discrete Fourier comes real close though). The analysis will work with mathematics but not with **real**

electronics.

Arden is again correct. From my understanding, ultramodulation is exactly audio AGC that reacts well below *audio* (I thought audio was DC through 20 kHz). For our purposes anything below 300 Hz is not *audio* I guess.

Ray Mack
WD5IFS
mack@mails.imed.com

>From John:

In the case of more than 100% *negative* modulation, it's a different story. The carrier does indeed reverse its polarity (180 degree phase shift). Such a reversal is a form of phase modulation which requires many extra (for phase modulation, 90 degree-shifted) sidebands, hence splatter. And since the phase change is so abrupt, the bandwidth needed is even greater.

Do a phasor (a kind of a frequency-sensitive vector) analysis (by hand is fine) to prove this. The carrier phasor would need a huge chunk of 90 degree shifted sidebands to jump polarity like this. Look at Terman's, or W6QYT's (Oswald Villard) analysis of this in 6/47 QST for a different way of seeing this.

>From Arden:

> > What really happens is that with ultramodulation you change the average value of
> > the carrier at the rate of the peaks of the syllables.
>
> The latter sounds correct as this is what we see with SSB too.

Beg to differ with these statements: How can you "see" something that isn't there? There is no carrier (darn little) in a SSB (more correctly SSBSC) signal. What you *are* seeing is the algebraic sum of the sidebands. The former statement is a description of modulation distortion, no matter how you cut it. Taken literally, sideband energy would be created throughout and beyond the audio sidebands (in other words *splatter*). The comment on invisible narrow sidebands is wishful thinking. The only way that can happen is with audio agc with an attack/decay bandpass well below audio frequencies. Mr. Fourier can straighten you out on these annoying little details. Hi!

Arden Allen

Message-ID: <35D85103.A5B@ix.netcom.com>
Date: Mon, 17 Aug 1998 10:49:23 -0500

From: David Stinson <arc5@ix.netcom.com>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Mil.Aircraft Rcvr.Info Wanted
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Chip Owens asked:

> Have the following aircraft receiver & accessories:
>
> Receiver: BC-AR-429
> Local Tuning Knob: CW 23022
> Coil Set: C-379
> Ant. Relay Box: BC-AL-408
> Control Box: BC-AE-231

This receiver was part of Radio Set SCR-xx-283.
It was the Army's Command Set prior to the
SCR-274N and the acceptance of VHF in aircraft.
The matching transmitter is the BC-BC-xx-430.

The '-283 is for 28 volts. The SCR-183, which
was the same save for fil voltages, worked on
12 volts. The designations are BC-229 receiver
and BC-230 transmitter.

The design is late-20's and production began
at Aircraft Radio Corp in the very early 1930s
(can't find my notes right now). A.R.C. subbed the
design to Western Electric, Philco and even Graybar.
They were used throughout the war, where ever the
SCR-274 wasn't yet available or just because that
was what was on hand.

They suffered from the same problems the later -274N
had in fighter aircraft--
pilots with twiddling fingers.
The poor radio guy would set the radios on freq before
the flight, but the pilot had a "coffee-grinder,"
tuning head, usually located in the most difficult-
to-see area in the cockpit. He'd call someone and,
if he didn't get an immediate answer, he'd start
cranking-away. This meant, of course, that the guy
calling -him- didn't hear him come back, so -he-
would start cranking away. Soon no one could hear
anyone and, on landing, the poor radio sap got
chewed-out for "rotten radios." The Navy got smart

and solved this problem by stabilizing the later AN/ARC-5 (that's what that "S" in a yellow circle on ARC-5 receivers means) and taking the crank away from the pilot.

The Navy GF/RU designs were an improved version and were produced into the war years until the AN/ARC-5 and VHF sets came on-line. The aircraft that made the attacks at Midway and the early Pacific actions were outfitted with the GF/RU and a ZM-x navigation set.

Hope this helps!

73 DE Dave Stinson AB5S
arc5@ix.netcom.com

Date: Mon, 17 Aug 1998 13:12:47 -0400 (EDT)
From: William Donzelli <william@ans.net>
To: Old Tube Radios <boatanchors@theporch.com>
Cc: Baxter Smith <baxsmith@falls.igs.net>
Subject: Re: Crypto wheels/cogs?
Message-Id: <Pine.GS0.3.96.980817130105.25471C-100000@titan.purch.ans.net>
Mime-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Sorry about the super tardy response, but I had a bad week...

> My guess is that it's a set of keying discs for a BC-645 IFF transponder.
>
> I don't have a BC-645 book, but my Navy ABA-1 book mentions a "Keying
> Disc Set, Type C(*)-67AAB" and it's likely the Signal Corps had something
> similar.

This box (and wheels) are indeed for the SCR-515-A IFF set (also known as the ABA-1 to the Navy). These are not crypto items, just code wheels. The Mk IV IIF sets were a bit more advanced than the other sets (Mk II and III), in that they could send out quite a variety of responses. If you look at the rear end of the power unit (dynamotor) of the set, known as a PE-101-C or CWD-21AAX, you will discover a small door. Inside is a compartment where one code wheel could be mounted, so it spins with the motor shaft. When the main unit is interrogated with the appropriate burst of 470 MHz from the ground (ship, etc.), the box will "read" the pattern on the installed code wheel and output the pulses it defines. If the code is the correct one for the day, you do not get shot at.

The NRL was contemplating using crypto with IFF early in the war, but such a system never materialized.

What did the box and wheels eventually sell for? I am looking for a set.

William Donzelli
william@ans.net

Message-Id: <199808171715.NAA10101@smtp3.erols.com>
Date: Mon, 17 Aug 98 13:10:27 -0700
From: philip mccooy <dgnova@erols.com>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re aviation radio
Content-Transfer-Encoding: 7bit
Content-Type: text/plain; charset=us-ascii

Dave has pretty well answered your question, but let me add
a few things

The AL was made by Graybar in orders 19070-NY-39 and 200-NY-41

The AE was put out by Aircraft Radio 6 - 5 - 1935 or 5-6-35

The complete frequency range of the receiver is 150kc to 12.7mc
, the transmitter 2.5mc to 7.7 mc

Most were made by western electric and aircraf radio. I believe
Philco was the only other manufacture and made the last the
AS.

Nomenclature is unique and was applied to about 5 sets during
the 1930s. If someone on the list has the details I hope they
will comment.

Most SCR sets had, I guess you would call it the series letter
placed after the number ie SCR-123X but the SCR-183 was
nomenclatured as SCR-AX-183 along with the BC componants.

Note: the original BC-191 was the BC-AA-191

Again, I hope someone will shed some light on this nomenclature
rule.

Date: Mon, 17 Aug 1998 13:14:19 -0400
From: polepeeg@aaa4rm.ba-watch.org (BA Marina Electrician)
Message-Id: <199808171714.NAA26792@aaa4rm.ba-watch.org>

To: Old Tube Radios <boatanchors@theporch.com>
Cc: boatanchors@theporch.com
Subject: Re: Unknown receiver

Jon they, Tech. Radio (not TMC), built a transmitter called the T350 that had parallel 813s mod'd by 805s. Had built-in MO (vfo) and antenna tuna.

Odd 15" width by 30" deep & were bulit by that SF's Tech Radio co. on a british contract to replace a pre-ww2 Marconi 'trailer transmitter.'

T350 had a huge garden of Thermador xfirmrs... ask the man who drives one.

I've heard of the companion LRR6 & you're real lucky to have scored one!

Marty
